



Joint NIOSH/NIST/SBCCOM Public Meeting Agenda

Standards Development Efforts for Full Facepiece
Air-Purifying Respirators (APR) Used to Protect
Emergency Response Workers Against Chemical,
Biological, Radiological and Nuclear (CBRN)
Agents and Air-Purifying Escape Respirators to
protect workers against CBRN Agents

Hilton Garden Inn, Canonsburg, PA

October 16 – 17, 2002



Agenda – October 17

<u>Time</u>	<u>Topic</u>	<u>Presenter</u>
8:30 – 8:40	Air Purifying Respirator Overview	Mr. Jonathan Szalajda, NIOSH
8:40 – 9:30	APR CBRN Standard Implementation	Mr. Les Boord, NIOSH
9:30 – 10:00	Open Comment Period – CBRN APR	
10:00 - 10:30	Break (including Sub Panel discussions)	
	Environmental Conditioning and Human Factors Testing	Mr. Frank Palya, NIOSH
	SMARTMAN and Chemical Warfare Agent Testing	Mr. Terrence Cloonan, NIOSH Mr. Raymond Lins, SBCCOM
10:30 - 11:00	Simulant Project	Mr. Frank Palya, NIOSH
11:00 – 11:45	Attendee Presentations	Mr. William Haskell SBCCOM Mr. G. Berndtsson, SEA Mr. T. Burch, Cyrano Sci.
11:45 – 1:00	Lunch	



Agenda – October 17

1:00 – 1:30

Sub Panel Discussions

- * Environmental Conditioning
- * SMARTMAN and CWA Testing

Mr. Frank Palya, NIOSH

Mr. Ray Lins, SBCCOM

Mr. Terrence Cloonan, NIOSH

1:30 – 2:15

Air-Purifying Escape Respirator
Concepts

Panel

2:15 – 3:15

Open Comment Period – CBRN Escape Respirators

3:15 - 3:30

Break (including Sub Panel
Discussions)

3:30 – 3:45

Standards Development
Schedule

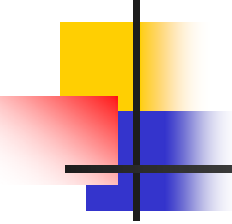
Mr. Les Boord, NIOSH

3:45 – 4:45

Open Comment Period

4:45 – 5:00

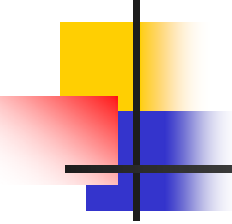
Summary and Conclusions



CBRN APR Respirator Concepts- Overview

Three Tiers of Requirements:

- 42 CFR, Part 84 – Applicable Sections
- Requirements Derived from other Standards/Specifications
- Special CBRN APR Requirements



CBRN APR Respirator Concepts-Overview

- Special CBRN APR Requirements
 - Systems CWA Penetration / Permeation
 - Laboratory Respiratory Protection Level
 - Gas Life Testing



CBRN APR – Test Procedure Validation

- NIOSH is developing Standard Test Procedures for the special CBRN APR Requirements
- Verification Testing is ongoing
- Sub Panel Breakout Sessions to discuss testing



CBRN APR Standard Implementation

- Implementation
- Manufacturing Prototype Testing Program
- Use Scenarios
- Quality Assurance
- Cost



CBRN Standards Development

■ Implementation

- Comments on Concept
 - Open until November 15, 2002
- CBRN APR Draft Standard Published in Federal Register -
 - December 2002
 - 30 Days for comment
- Manufacturer LAT Research
 - December 15, 2002 thru February 15, 2003
- CBRN APR Federal Register Notice
 - March 1, 2003
- CBRN APR Certification
 - March 15, 2003



CBRN Standards Development

- Manufacturer Research Program:2 Parts
 - Part 1: Workshop, LAT Test Experience
 - Half Day Discussion of Respirator Testing
 - Part 2: R & D Live Agent Testing
 - 2 Days, 4 Agent Tests
- Part 1 and Part 2 Independent Events
- Part 1 Date and Time to be Announced



CBRN Standards Development

- Manufacturer R&D Prototype Test Application To NIOSH
 - Respirator Identification
 - Model # & Technical Description
- Program Cost: \$4500/ SMARTMAN Test
- Program Details To Be Posted on Website



CBRN APR Use Scenarios

Warm Use: Less than IDLH concentrations, sustained warm zone support operations; long term use for decon, traffic control, rehabilitation, rescue and recovery; agent known and quantified

Crisis Provision: Contingency use for short duration; above IDLH and high physiological (flow) demand possible; contingency for unforeseen factors such as a secondary device or pockets of entrapped hazard, emergency escape



CBRN APR: Cautions and Limitations

- 14G Gas Mask Cautions and Limitations
- Cautions and Limitations derived from CBRN –SCBA
- Specific Cautions and Limitations for CBRN –APR

*Refer to list of Cautions and Limitations contained in the Concept Paper



CBRN APR: Service Life

- Assign a rating factor to classify filters for use
- Base Ratings on Capacity of Filter
- Agent known and quantified
- Rating established based on Agent IDLH and monitored concentration



CBRN Standards Development

- CBRN APR Rating:
 - CBRN APR Use \leq IDLH
 - Contingency Protection To 3 X IDLH
 - Service Time Testing:
 - Short Duration: 15, 30, 45 minutes
 - Long Duration: 60, 90, 120 minutes
 - Specified By Applicant
 - Single Use
 - CBRN Rating = Capacity @ IDLH



CBRN Standards Development

- CBRN Rating = Capacity @ IDLH
- CBRN 15 Means
 - 15 = 15 minute life at IDLH
 - 15 = 30 minutes at 50% IDLH
- CBRN 60 Means
 - 60 minutes @ IDLH
 - 120 minutes @ 50% IDLH



CBRN APR – Quality Assurance

CBRN APR Quality Assurance Provisions

- 42 CFR, Part 84 Subpart E. Quality Control
- Sampling / Test / Inspection Plan
 - Barrier Materials
 - Mechanical Seals Forming A Barrier With Ambient
 - Mechanical Connector Threads
 - Mechanical Connector Sealing Gland
 - Gasket Dimensions, Material, Hardness
 - Final Filter Tests



CBRN Standards Development

- **Testing will be performed in two locations**

NPPTL - 42 CFR, Service Life and Particulate Testing

SBCCOM – Live Agent Testing and LRPL

- **Environmental Conditioning will be performed at both locations**
- **Testing at NPPTL 53 days**
- **Total cost estimated at \$ 88,000**

CBRN Standards Development



Penetration and Permeation Testing
Chemical Analysis Team , Edgewood, MD

6 APR systems (3-GB; 3:HD)

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Environmental Conditioning / Testing

Time - 34 Days (continuous)

Cost – \$7400

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Live Agent Testing

3 – GB Testing 3 – HD Testing

Time – 6 Days

Cost - \$27800

Total Cost and Time

Time - 40 days

Cost - \$ 35200

CBRN Standards Development

Laboratory Respirator Protection Level; Interchangeability (Modified LRPL)

Protection Factor Group, Edgewood, MD
25 – 29 APR systems
(Size is tariff dependant)



Laboratory Respirator Protection Level

Time - 5 days
Cost - \$10000



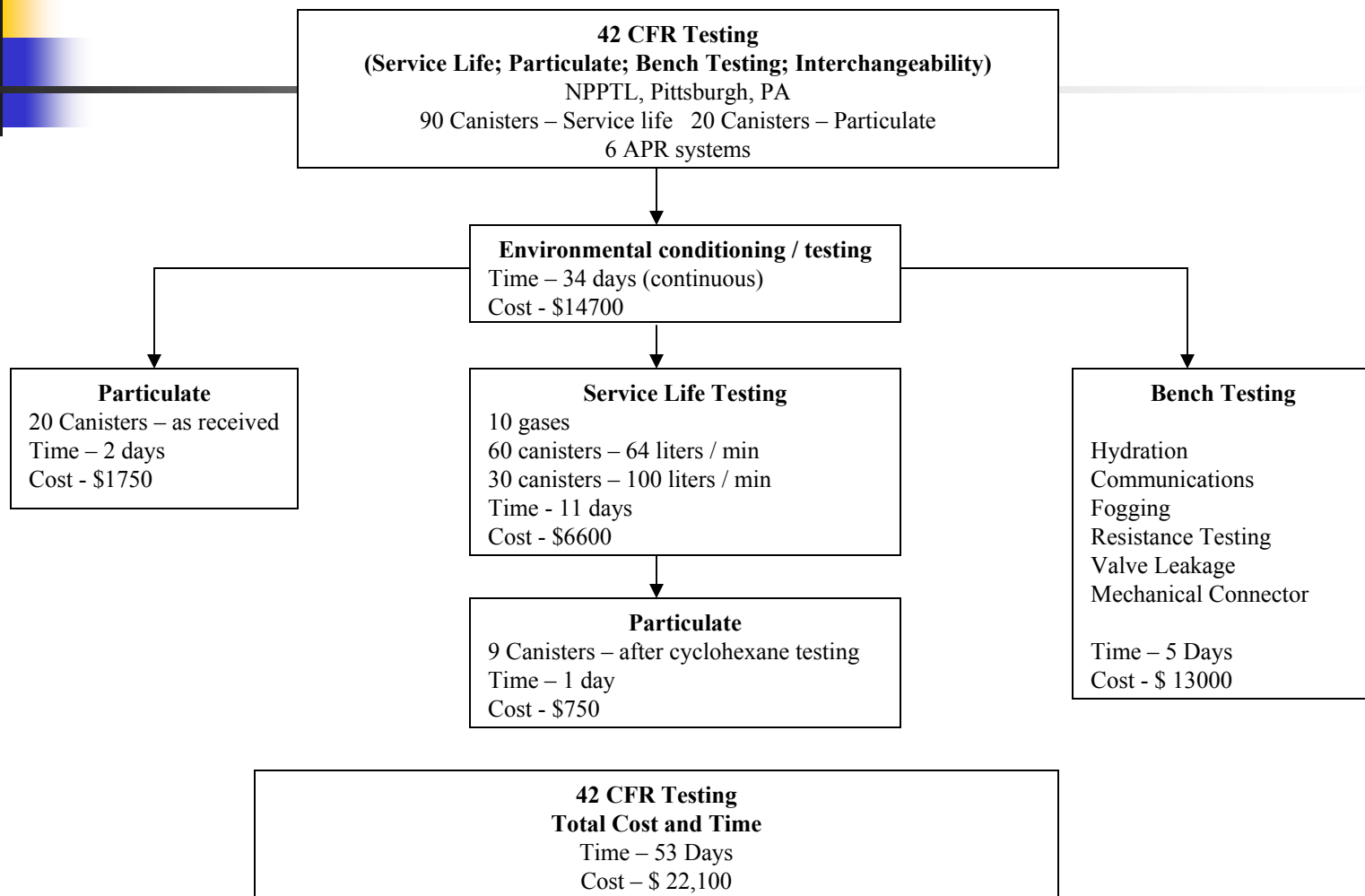
Modified Laboratory Respirator Protection Level

Time - 5 days
Cost - \$5000

Laboratory Respirator Protection Level; Interchangeability (Modified LRPL)

Total Cost and Time
Time – 10 Days
Cost – \$ 15,000

CBRN Standards Development





CBRN Standard Development

- Open Comment Period



Administrative Details

■ Information Docket

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